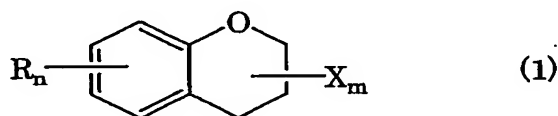


CLAIMS

WHAT IS CLAIMED IS:

1. A method for producing an optically active chromancarboxylate,
5 comprising a step of esterifying a racemic chromancarboxylic acid in an organic solvent comprising an alcohol in the presence of a biocatalyst, the racemic chromancarboxylic acid being represented by the formula 1:



- wherein R is a halogen atom, a hydroxyl group, a nitro group, an amino group,
10 a cyano group, a chloromethyl group, a trifluoromethyl group, a carboxyl group, a carboxymethyl group, a carboxyethyl group, a carboxyphenyl group, a substituted or unsubstituted alkyl group or a substituted or unsubstituted aryl group, and a plurality of R groups, if any, may be the same or different; X is a halogen atom, a hydroxyl group, a nitro group, an amino group, a cyano group,
15 a chloromethyl group, a trifluoromethyl group, a carboxyl group, a carboxymethyl group, a carboxyethyl group, a carboxyphenyl group, a substituted or unsubstituted alkyl group or a substituted or unsubstituted aryl group with the proviso that at least one X is a carboxyl group, a carboxymethyl group, a carboxyethyl group or a carboxyphenyl group, and a plurality of X
20 groups, if any, may be the same or different; m is an integer of from 1 to 5; and n is an integer of from 0 to 4.

2. The method according to claim 1, wherein the biocatalyst is a hydrolase produced by microorganisms.

3. The method according to claim 2, wherein the hydrolase is lipase.

25 4. The method according to claim 3, wherein the lipase is derived from microorganisms belonging to genus *Candida*.

5. The method according to any one of claims 1 to 4, wherein the alcohol

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has from 1 to 24 carbon atoms.

6. The method according to claim 5, wherein the alcohol is methanol, ethanol, n-propyl alcohol, isopropyl alcohol, n-butyl alcohol or isobutyl alcohol.

7. The method according to claim 6, wherein the alcohol is methanol.

5 8. The method according to any one of claims 1 to 7, wherein the chromancarboxylic acid is selected from the group consisting of chroman-2-carboxylic acid, chroman-3-carboxylic acid, chroman-4-carboxylic acid, 6-hydroxychroman-2-carboxylic acid, 6-hydroxychroman-2-methyl-2-carboxylic acid, 2-carboxymethyl-6-hydroxy-2-methylchroman, 6-hydroxy-5-methylchroman-2-carboxylic acid, 6-hydroxy-7,8-dimethylchroman-2-carboxylic acid, 6-hydroxy-2,7,8-trimethylchroman-2-carboxylic acid, 6-hydroxy-2,7,8-trimethylchroman-2-ylpropionic acid and 6-hydroxy-2,5,7,8-tetramethylchroman-2-carboxylic acid.

15 9. The method according to claim 8, wherein the chromancarboxylic acid is selected from the group consisting of chroman-2-carboxylic acid, 6-hydroxy-2,7,8-trimethyl-2-carboxymethylchroman, 6-hydroxy-2,7,8-trimethylchroman-2-ylpropionic acid and 6-hydroxy-2,5,7,8-tetramethylchroman-2-carboxylic acid.

20 10. The method according to claim 9, wherein the chromancarboxylic acid is 6-hydroxy-2,5,7,8-tetramethylchroman-2-carboxylic acid.

11. The method according to any one of claims 1 to 10, further comprising a step of separating a mirror image of the chromancarboxylic acid which is converted into the optically active chromancarboxylate from a reaction production solution after the esterification.

25 12. The method according to any one of claims 1 to 11, further comprising a step of hydrolyzing the optically active chromancarboxylate.